

Table S1. The top 15 up-regulated genes after acute FGF23 administration

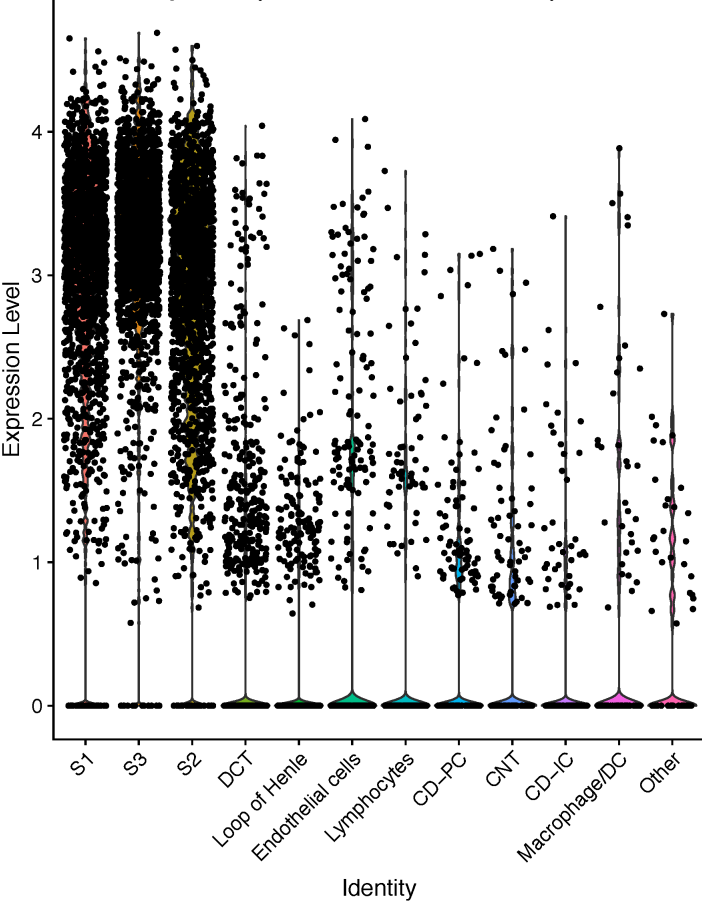
Gene Name	Symbol	NCBI No.	Fold Change	P-value
Early growth response 1	Egr1	NM_007913	9.06671	1.36E-08
Heparin-binding EGF-like growth factor	Hbegf	NM_010415	3.09658	5.33E-05
Dual specificity phosphatase 6	Dusp6	NM_026268	2.41652	1.65E-08
Zinc finger protein 36	Zfp36	NM_011756	2.22423	0.00017
Immediate early response 2	Ier2	NM_010499	1.96741	8.97E-06
Dual specificity phosphatase 4	Dusp4	NM_176933	1.87764	0.000835
Basic helix-loop-helix domain, class B2	Bhlhb2	NM_011498	1.79652	0.000678
Ngfi-A binding protein	Nab2	NM_008668	1.69864	0.000396
Jun-B oncogene	Junb	NM_008416	1.65532	0.000384
SERTA domain containing 1	Sertad1	NM_018820	1.50534	6.02E-05
Choline kinase alpha	Chka	NM_013490	1.50023	0.000239
DnaJ (Hsp40) homolog, subfamily C, member 17	Dnajc17	NM_139139	1.48847	0.000155
DNA-damage inducible transcript 3	Ddit3	NM_007837	1.48731	0.000251
Sprouty homolog 2	Spry2	NM_011897	1.47345	0.000733
FBJ osteosarcoma oncogene	Fos	NM_010234	1.4645	0.000658

Table S2. The 15 most down-regulated genes after acute FGF23 administration

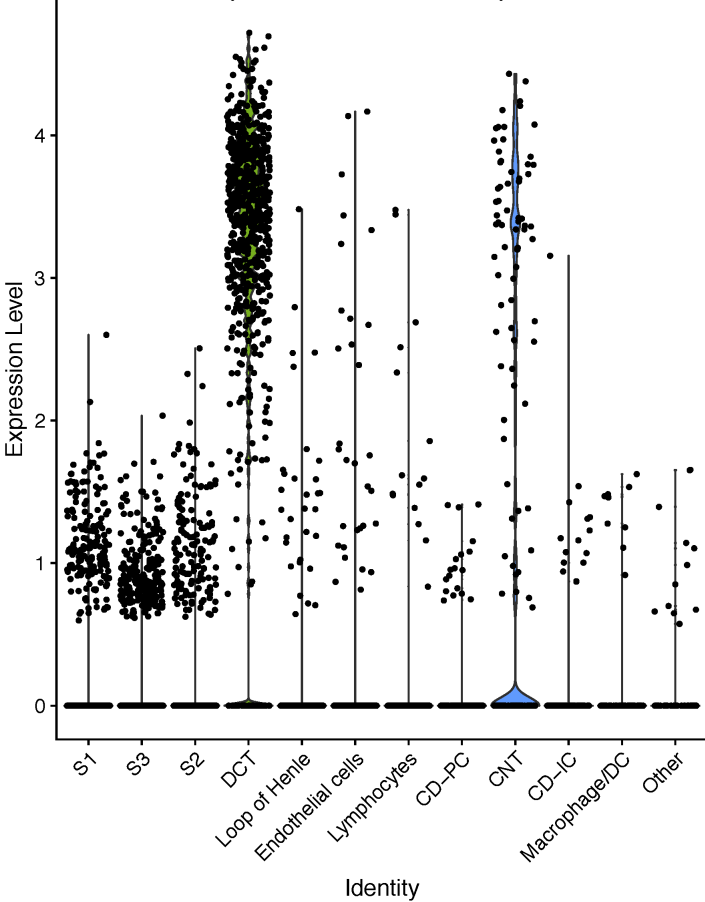
Gene Name	Symbol	NCBI No.	Fold Change	P-value
Acyl-CoA thioesterase 3	Acot3	NM_134246	-1.44409	0.000438
Solute carrier organic anion transporter family member 1a4	Slco1a4	NM_030687	-1.43617	0.000374
Solute carrier family 35	Slc35a3	NM_144902	-1.35772	0.000985
Leucine-rich repeats and immunoglobulin-like domains 2	Lrig2	NM_001025067	-1.33814	0.000991
APOBEC1 complementation factor	A1cf	NM_001081074	-1.33433	0.000139
Tetratricopeptide repeat domain 30A2	Ttc30a2	NM_001081228	-1.31536	0.000198
Tryptophan rich basic protein	Wrb	NM_207301	-1.29465	2.62E-05
ATPase, H ⁺ transporting, lysosomal accessory protein 2	Atp6ap2	NM_027439	-1.28521	0.000426
Solute carrier family 31, member 1	Slc31a1	NM_175090	-1.27627	0.000518
Calcium-dependent activator protein for secretion 2	Cadps2	NM_153163	-1.2553	0.000982
Carbonic anhydrase 13	Car13	NM_024495	-1.24159	0.000629
Plasma glutamate carboxypeptidase	Pgcp	NM_018755	-1.22196	0.000821
Adenosine deaminase-like	Adal	NM_029475	-1.20276	0.000991
Galactose mutarotase	Galm	NM_176963	-1.19341	0.000266
Germ cell-less homolog 1	Gmcl1	NM_027955	-1.17749	0.000901

Figure S1

A. Npt2a (PT S1/S2 marker)



B. Ncc (CNT/DT marker)



- S1
- S3
- S2
- DCT
- Loop of Henle
- Endothelial cells
- Lymphocytes
- CD-PC
- CNT
- CD-IC
- Macrophage/DC
- Other

Figure S2

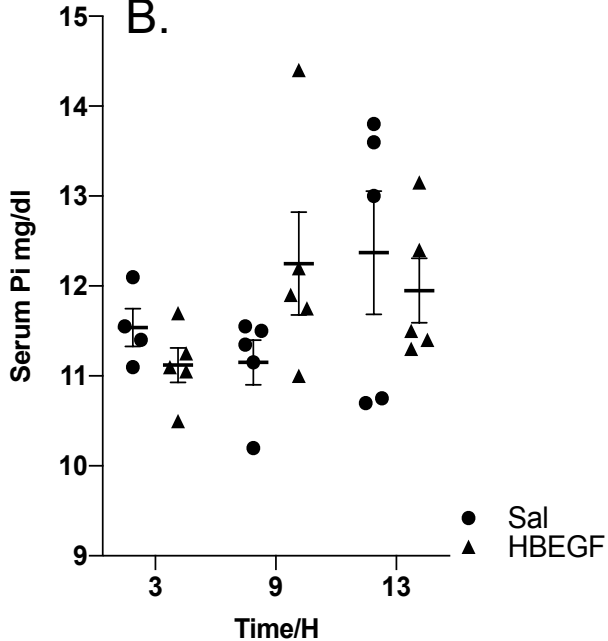
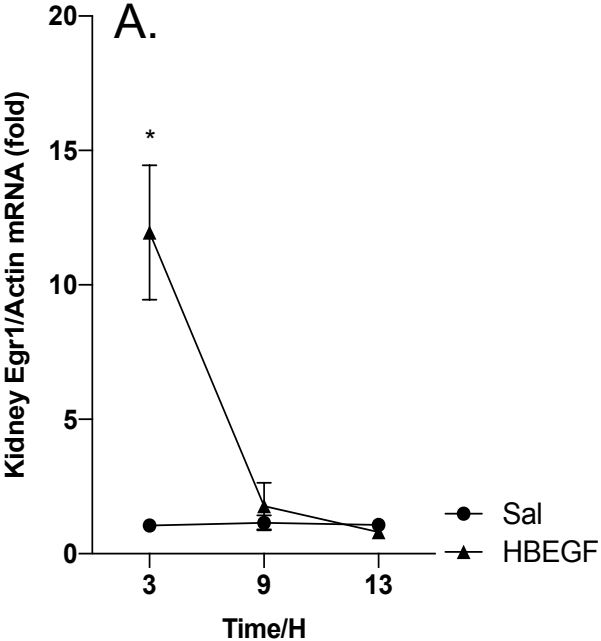


Figure S3

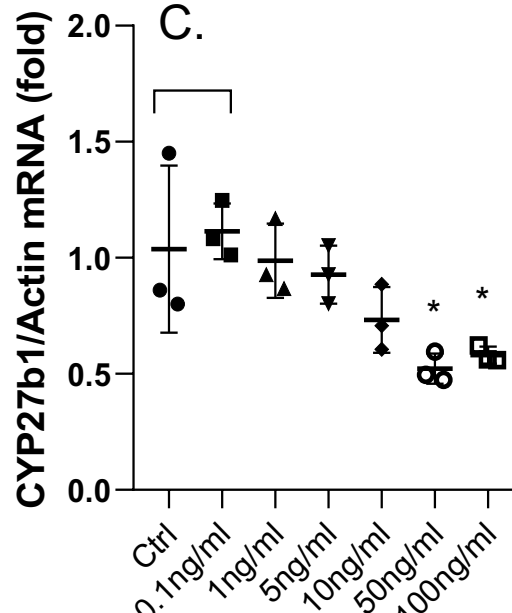
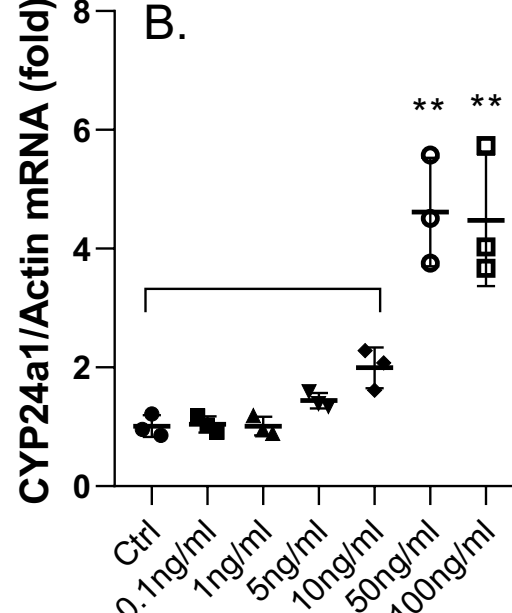
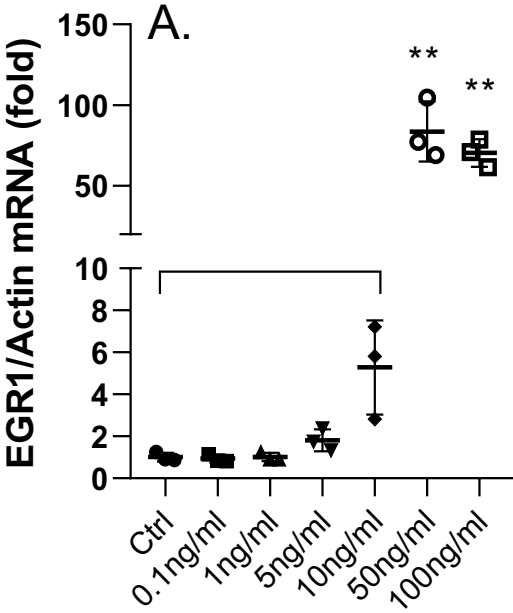


Table S1 and Table S2. Kidney microarray data after acute FGF23 administration. By microarray, 1 hour post FGF23 injection to WT mice showed significant changes in kidney mRNAs compared with control mice. The top 15 up-regulated genes are listed in Table 1 with *Egr1* serving as the positive control for FGF23 signaling through MAPK. *Hbegf* was the second-most highly elevated gene. Table 2 lists the 15 most down-regulated genes.

Figure S1. Violin plots of nephron segment gene markers. Violin plots of (A) *Npt2a* (primarily proximal tubule) and (B) *Ncc* (primarily distal tubule) are shown.

Figure S2. Long term effect of HBEGF on WT renal genes. 5 ug rhHBEGF was given intravenously to 9-10 week old female WT mice. (A) *Egr1* mRNA expression was induced at 3 h and returned to baseline level at 9 h and 13 h. No significant changes were observed in serum phosphorus (B). (* $P < 0.05$ versus saline control mice. N=4-5. 'Sal', saline).

Figure S3. Incremental doses of HBEGF *in vitro*. HEK293 cells were treated with saline (Ctrl), 0.1 ng/ml, 1 ng/ml, 5 ng/ml, 10 ng/ml, 50 ng/ml or 100 ng/ml of rhHBEGF for 24 h. (A) *EGR1* mRNA levels started increasing at 5 ng/ml and were significantly elevated at 50 ng/ml and 100 ng/ml; (B) *CYP24A1* showed a similar pattern; (C) *CYP27B1* was significantly decreased at 50 ng/ml and 100 ng/ml (* $P < 0.05$, ** $P < 0.01$ versus the bracketed groups. N=3).

Supplementary information is available at *Kidney International's* website.